AMENDMENTS TO THE CLAIMS

1. (Currently amended) An image processing apparatus for processing RGB image data output from an image capturing element including a primary-color filter, comprising:

a low frequency luminance signal generator generating a low frequency luminance signal based on the RGB image data; and

a middle-high range luminance component compensation section for compensating for a middle-high range luminance component of ~~a~~ the low-frequency luminance signal ~~generated based on the RGB image data~~ such that the low-frequency luminance signal has substantially an ideal frequency luminance characteristic which is lower than or equal to a predetermined frequency.

2-20. (Cancelled)

21. (New) An image processing apparatus for processing RGB image data output from an image capturing element including a primary-color filter, comprising:

a low frequency luminance signal generator generating a low frequency luminance signal based on the RGB image data;

a middle-high range luminance component compensation section for compensating for a middle-high range luminance component of the low-frequency luminance signal, said middle-high range luminance component compensation section including a middle-high range luminance component extracting section for extracting a middle-high range luminance component from the RGB image data, the extracted middle-high range luminance component having a zero amplitude

at an angular frequency $\omega=\pi$ and a maximum amplitude at an angular frequency ω between $\pi/2$ and π; and

a synthesis section for adding the extracted middle-high range luminance component to the low frequency luminance signal.

22. (New) The image processing apparatus of claim 21 wherein said middle-high range luminance component extraction section includes at least one filter having a size of an even-number of pixels.

23. (New) The image processing apparatus of claim 22 wherein said at least one filter comprises a two-dimensional filter having coefficients symmetrically arranged with respect to a x-direction and a y-direction.

24. (New) The image processing apparatus of claim 23 wherein said at least one filter includes a first low-pass filter having a differentiation capability and a second low-pass filter and wherein the middle-high range luminance component comprises a difference between an output obtained by arithmetically processing a first luminance signal using the first low-pass filter and an output obtained by arithmetically processing the first luminance signal using the second low-pass filter.

25. (New) The image processing apparatus of claim 22 wherein said at least one filter includes a first low-pass filter having a differentiation capability and a second low-pass filter and

wherein the middle-high range luminance component comprises a difference between an output obtained by arithmetically processing a first luminance signal using the first low-pass filter and an output obtained by arithmetically processing the first luminance signal using the second low-pass filter.

26. (New) The image processing apparatus of claim 24 further comprising:

a first interpolation section between the primary-color filter and the medium-high range luminance component extraction section for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of 3 pixels x 3 pixels.

27. (New) The image processing apparatus of claim 26 further comprising:

a second interpolation section between the primary-color filter and the low frequency luminance signal generator for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of an even-number of pixels.

28. (New) The image processing apparatus of claim 27, wherein at least one of the first and second interpolation sections interpolates the RGB image data by using a median method for a G-component and a bilinear method for R- and B-components.

29. (New) The image processing apparatus of claim 27 further comprising:

a median filtering section, including a median filter, for removing noise inherent to the image capturing element which is contained in a color-difference signal generated based on a RGB image signal from the second interpolation section;

wherein the median filtering section changes the size of the median filter according to an amount of the noise.

30. (New) The image processing apparatus of claim 22 further comprising:

a first interpolation section between the primary-color filter and the medium-high range luminance component extraction section for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of 3 pixels x 3 pixels.

31. (New) The image processing apparatus of claim 21 further comprising:

a first interpolation section between the primary-color filter and the medium-high range luminance component extraction section for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of 3 pixels x 3 pixels.

32. (New) The image processing apparatus of claim 31 further comprising a second interpolation section between the primary-color filter and the low frequency luminance signal generator for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of an even-number of

pixels.

33. (New) The image processing apparatus of claim 32, wherein at least one of the first and second interpolation sections interpolates the RGB image data by using a median method for a G-component and a bilinear method for R- and B-components.

34. (New) The image processing apparatus of claim 33 further comprising:

a median filtering section, including a median filter, for removing noise inherent to the image capturing element which is contained in a color-difference signal generated based on a RGB image signal from the second interpolation section;

wherein the median filtering section changes the size of the median filter according to an amount of the noise.

35. (New) The image processing apparatus of claim 32 further comprising:

an interpolation section between the primary-color filter and the low frequency luminance signal generator for interpolating missing components among R-, G-, and B-components by arithmetically processing the RGB image data using a filter having a size of an even-number of pixels.

36. (New) The image processing apparatus of claim 35 further comprising:

a median filtering section, including a median filter, for removing noise inherent to the image capturing element which is contained in a color-difference signal generated based on a

RGB image signal from the second interpolation section;

wherein the median filtering section changes the size of the median filter according to an amount of the noise.

37. (New) The image processing apparatus of claim 21 further comprising:

a middle/high-range luminance component extraction section for extracting at least one of a middle-range luminance component and a high-range luminance component based on the second luminance signal; and

a second synthesis section for adding at least one of the middle-range luminance component and the high-range luminance component to the second luminance signal so as to generate a third luminance signal.

38. (New) An image processing apparatus according to claim 37, wherein the middle/high-range luminance component extraction section arithmetically processes the second luminance signal by using one filter which has an adjustable coefficient.

39. (New) A method of processing RGB image data output from an image capturing element including a primary-color filter comprising the steps of:

generating a first luminance signal from the RGB image data;

generating a second luminance signal having a middle-high range luminance component from the RGB image data; and

correcting the second luminance signal by extracting a middle-high range luminance

component from the first luminance signal and adding the extracted middle-high range luminance component to the second luminance signal.